CLAIMS

1. A pattern formation substrate in which a predetermined pattern is formed by discharging droplets onto a target surface thereof, wherein;

the pattern is so formed that, when the droplet is landed onto the target surface such that part of the droplet landed is in a first area in which a contact angle between the droplet and the target surface is a first angle, and part of the droplet landed is in a second area which is adjacent to the first area and in which a second contact angle is smaller than the first contact angle, the equation (1) is satisfied,

$$D \leq L \times \{1+2(\cos\theta_2-\cos\theta_1)\} \ldots (1)$$

where D is a droplet diameter, θ_1 is a first contact angle, and θ_2 is a second contact angle.

2. A pattern forming method, comprising the steps of:

landing droplets whose one part is landed on a first area and whose other part is landed on a second area on said pattern formation substrate as set forth in claim 1.

3. The pattern forming method as set forth in claim 1, wherein the first contact angle is set so that the first

area becomes a lyophobic area which is lyophobic against the droplets, and a second contact angle is set so that the second area becomes a lyophilic area which is lyophilic to the droplets.

4. A pattern forming method in which a predetermined pattern is formed by discharging droplets onto a target surface, comprising the steps of:

forming a first area and a second area adjacent to the first area before the droplet is discharged, the first area being lyophobic against droplets, and the second area being lyophilic to droplets and being to be the pattern to be formed; and

discharging the droplets onto the target surface so that a distance x satisfy the equation 2, the distance x being a distance from a border between the first and the second areas, to a center of a landed droplet,

$$X \leq \sqrt[3]{\frac{4}{2-3\cos\theta_1+\cos^3\theta_1}} \cdot \frac{D}{2} \quad \cdots\cdot(2)$$

where X is a distance between border of water attracting/water repelling patterns and a center of a landing droplet, D is a droplet diameter, and θ_1 is a contact angle of an ink in a water repelling area.

5. A pattern forming method in which a predetermined pattern is formed by discharging droplets onto a target surface, comprising the steps of:

forming a first area and a second area adjacent to the first area before the droplet is discharged, the first area being lyophobic against droplets, and the second area being lyophilic to droplets and being to be the pattern to be formed; and

discharging the droplets onto the target surface so that a discharging pitch P satisfy the equation (3), the discharging pitch P being a pitch when the droplet is landed,

$$\frac{0.04D^3}{L} \leq P \leq \frac{0.4D^3}{L} \qquad \cdots\cdot(3)$$

where P is a discharging pitch (μm), D is a droplet diameter (μm), L is a water attracting line width (μm).

6. A pattern forming method as set forth in any one of claims 2 through 5, wherein uninterrupted patterns are formed by unifying droplets discretely landed onto the target surface.

7. A pattern forming method as set forth in any one

of claims 2 through 5, wherein an inkjet head is used for discharging the droplets.

8. A pattern forming method as set forth in any one of claims 2 through 5, wherein the first area and the second area are so formed as to be substantially flat.

9. A pattern forming method as set forth in any one of claims 2 through 5, wherein the droplets contain electrically conductive particles.

10. A pattern forming method as set forth in any one of claims 2 through 5, wherein the second area is a line-shaped pattern.